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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,516	07/18/2003	Steven Kresnyak	9-16066-1US-1-1	1162

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Ogilvy Renault
Suite 1600
1981 McGill College Avenue
Montreal, QC H3A 2Y3
CANADA

EXAMINER	
NGUYEN, TAM M	
ART UNIT	**PAPER NUMBER**
1764	

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/621,516	KRESNYAK, STEVEN
	Examiner	Art Unit
	Tam M. Nguyen	1764

TH

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The objection to claim 1 is withdrawn by the examiner in view of the amendment filed on August 11, 2004.

The rejection of claim 10 under 35 USC § 112 is withdrawn by the examiner in view of the amendment filed on August 11, 2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clare et al. (4,789,461) in view of Ohsol et al. (5,948,242).

Applicant is claiming several processes for removing water and solids from a crude oil. The claimed processes involve exposing a crude oil source containing water with a diluent to a dry crude oil thereby vaporizing the water in the source as well as steps for isolating solids present in the dehydrated crude. Applicant further claims re-circulating at least a portion of the dehydrated crude for contact with the crude source or the dehydrator. Applicant also claims preconditioning the crude to remove solids and minerals from the source, specific crude specifications and method separation steps.

The reference of Clare et al.(4,789,461) discloses a method for the removal of water from crude oil. See column 2, lines 25-30. It is preferable that the dehydrated oil has a water content less than 0.5% by volume. See column 3, lines 49-51. The reference teaches that the crude oil is sprayed onto the surface of heated liquid within a casing of a dehydrator. See column 2, lines 42-46. The crude oil has an API of 3° to 18° and is converted to 18° to 25°. See column 5, lines 61-64. The liquid in the casing is maintained above the distillation temperature for evaporating water and lighter hydrocarbons. See column 2, lines 33-36. The liquid is largely dehydrated. See column 2, lines 46-49. The water in the incoming crude is evaporated at the surface of the heated liquid. See column 2, lines 59-60. Clare et al.(4,789,461) further discloses that a portion of the dehydrated crude may be recycled and mixed with crude prior to it entering the heating chamber and additional amount of diluent (light hydrocarbon) is stripped from the dehydrated crude. See column 2, lines 16-19; col. 4, lines 35-39. Clare et al.(4,789,461) teaches that the distilled water and light hydrocarbons are condensed and separated. See column 3, lines 3-6 and 43-48. The recovered light hydrocarbon (diluent) may be recycled and mixed with the incoming feed. See column 3, lines 3-6 and 43-48. It is also disclosed that the dehydrated oil can be

returned to the dehydrator via line 19 in Fig 1. See column 4, lines 35-39. The reference teaches an additional embodiment wherein the apparatus includes a means for separating entrained solids by gravity. See column 3, lines 20-24.

The reference of Clare et al. (4,789,461) succeeds in disclosing a process for the dehydration of oil with steps corresponding to applicant's exposing of a crude oil to a dry crude oil in a dehydrator. The reference also succeeds at disclosing a preconditioning step wherein solids are removed from the crude prior to passing it to the dehydrator. In addition, the reference succeeds at disclosing the re-circulation of the dehydrated crude and diluent to the crude feed or back to the dehydrator.

Claims 1, 2 and 3:

Clare does not specifically disclose that the dehydrated crude is passed into at least one of steam stripping or flashing to remove diluent from the dehydrated crude.

Ohsol discloses a process for upgrading heavy crude oil wherein an oil/diluent is heated and then passed into a steam-stripping zone to remove diluent from the oil product. (See col. 12, lines 15-25)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Clare by separating diluent from the dehydrated crude by heating and stripping the dehydrated crude as taught by Ohsol because the stripping step is effective to further remove diluent from dehydrated crude oil to further improve the properties of the hydrated crude oil.

Claims 4 and 5:

Clare does not disclose that the diluent to crude oil ratios are between 0.1 to 1.0 or 0.3 to .6.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Clare by using the claimed ratios because one of skill in the art would use any ratios including the claimed ratios with the expectation that the results would be the same or similar when using the ratios of either 0.1 or 0.08.

Claim 6:

Clare does not disclose that the recovery phase comprises recovering diluent in an amount of greater than 90%. However, the modified process of Clare is similar to the claimed process. Therefore, it would be expected the modified process of Clare would recover diluent in an amount of greater than 90% as claimed.

Claim 7:

Clare does not disclose that the dehydrated crude oil is devoid of salts.

Ohsol discloses a process for upgrading heavy crude oil production including a step of removing salts from the crude oil. (See col. 1, lines 22-27; col. 9, line 35-36)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Clare by removing salts from the dehydrated crude oil as taught by Ohsol because the presence of salts in the hydrated crude oil wreaks havoc to the processing of the oil in a refinery.

Claim 8:

The dehydrated crude oil has a water content less than 0.5 by volume. (col. 3, lines 49-50).

Claim 9:

Clare does not specifically disclose a step of upgrading the dehydrated crude oil from between 7 API and 10 API to 21 API.

However, Clare discloses that the dehydrated crude is further processed in a known manner such as fractionating (upgrading) the crude oil and the crude oil having a 3-18 API is treated with an artificial solvent or diluent to change to an artificial 18-25 API. (See col. 3, lines 39-42; col. 5, lines 59-63). Since the treated crude oil has an API which overlaps the claimed API, it would be expected the API of the upgraded dehydrated crude oil would overlap the claimed API as well.

Claim 11:

Clare does not specifically disclose that the dehydrated crude has a viscosity of 350 at 10° C. However, the modified process of Clare is similar to the claimed process in terms of feedstock, diluent, and dehydrating. It would be expected that the dehydrated crude oil would have a viscosity as claimed.

Claim 12:

Clare does not disclose the step of providing a diluent makeup stream for contacting with the crude oil prior to pretreating.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Clare by providing a diluent makeup stream as claimed because it is understood that if the process is continuously operated over a long period of time, diluent would be used up because diluent recovery is not 100%. Therefore, it would be

effective to provide a diluent makeup stream to add a sufficient amount of diluent to the crude oil to maintain the effectiveness of the removal of solids and water from the crude oil.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare et al. (4,789,461) in view of Ohsol et al. (5,948,242) and Xia et al. (6,156,190).

Clare does not disclose a step of upgrading the dehydrated crude oil.

Xia discloses that a heavy oil can be upgraded by thermal cracking.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Clare by cracking or distilling the crude oil because the cracking or distilling step would improve the value of the crude oil

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3, 7-9, and 11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9, 11, 13-20 of U.S. Patent No. 6,372,123 in view of Ohsol et al. (5,948,242).

The U.S. Patent claims do not claim a step of stripping diluent from the dehydrated crude oil.

Ohsol discloses a process for upgrading heavy crude oil wherein an oil/diluent is heated and then passed into a steam-stripping zone to remove diluent from the oil product. (See col. 12, lines 15-25)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the U.S. Patented claims by using the steam stripping step of Ohsol because the Ohsol stripping step is effective to further remove diluent from the dehydrated crude oil to further improve the properties of the dehydrated crude oil. Consequently, the dehydrated crude oil of the U.S. Patented claims would have similar properties as the present claimed dehydrated crude oil because of the similarities between the two sets of claims.

Claims 1-3, 7-9, 11, and 12 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10, 13, 14, 15, 16, 17, 20, 22, 24, and 25 of copending Application No. 10/011,319 in view of Ohsol et al. 5,948,242

The copending claims do not claim a step of stripping diluent from the dehydrated crude oil.

Ohsol discloses a process for upgrading heavy crude oil wherein an oil/diluent is heated and then passed into a steam-stripping zone to remove diluent from the oil product. (See col. 12, lines 15-25)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of copending claims by using the steam stripping step of Ohsol because the Ohsol stripping step is effective to further remove diluent from the dehydrated crude oil to further improve the properties of the dehydrated crude oil.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

The argument that if Clare was not concerned with the diluent, there could be no recirculation of any recovered diluent to the crude oil containing water in the separation phase is not persuasive because whether Clare is concerned with the diluent or not, one of skill in the art would have modified the process of Clare to further separate light fractions (diluent) from the heavy oil to improve its properties and recycled the diluent for economic reasons.

The argument that Clare does not recirculate dry crude oil to the vaporizing surface is not persuasive because Clare teaches the step of recycling the dry oil to the feed crude oil, which is then contacted with the vaporizing surface. Clare also teaches that the dry oil can be returned to the dehydrator (which comprises vaporizing surface) though line 19 in the form of a spray. (See col. 2, lines 15-19; col. 4, lines 34-39)

The argument that in the separation process of Ohsol, it is evident that the composition retains water and whereas applicant clearly describes the dry crude oil and further stipulates vaporization of water in the crude is not persuasive. The examiner relied upon Ohsol to teach that it is known to separate a low boiling point hydrocarbon fraction (diluent or light hydrocarbon) from a higher boiling point hydrocarbon fraction (heavy oil) by utilizing a

stripping process. One of skill in the art would have modified the process of Clare by separating diluent from the dehydrated crude by heating and stripping the dehydrated crude as taught by Ohsol because the **stripping step** is effective to further remove diluent from dehydrated crude oil to further improve the properties of the hydrated crude oil. It is reminded that the examiner does not utilize the oil composition of Ohsol in the process of Clare.

Regarding the double patenting rejection argument, please see the responses above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tam M. Nguyen
Examiner
Art Unit 1764

TN

Walter D. Griffin
Primary Examiner